

## SEQUENCE LISTING

<110> TOLEDANO, MICHEL  
BITEAU, BENOIT

<120> APPLICATIONS OF A NEW CLASS OF ENZYMES: SULFIREDOXINS

<130> 1169-042

<140> 10/563,375  
<141> 2006-01-04

<150> PCT/FR04/01727  
<151> 2004-07-02

<150> FR 03/08212  
<151> 2003-07-04

<160> 17

<170> PatentIn Ver. 3.3

<210> 1  
<211> 127  
<212> PRT  
<213> *Saccharomyces cerevisiae*

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Met Ser Leu Gln Ser Asn Ser Val Lys Pro Thr Glu Ile Pro Leu Ser  
1 5 10 15  
Glu Ile Arg Arg Pro Leu Ala Pro Val Leu Asp Pro Gln Lys Ile Asp  
20 25 30  
Ala Met Val Ala Thr Met Lys Gly Ile Pro Thr Ala Ser Lys Thr Cys  
35 40 45  
Ser Leu Glu Gln Ala Glu Ala Ala Ser Ala Gly Glu Leu Pro Pro  
50 55 60  
Val Asp Val Leu Gly Val Arg Val Lys Gly Gln Thr Leu Tyr Tyr Ala  
65 70 75 80  
Phe Gly Gly Cys His Arg Leu Gln Ala Tyr Asp Arg Arg Ala Arg Glu  
85 90 95  
Thr Gln Asn Ala Ala Phe Pro Val Arg Cys Arg Val Leu Pro Ala Thr  
100 105 110  
Pro Arg Gln Ile Arg Met Tyr Leu Gly Ser Ser Leu Asp Ile Glu  
115 120 125

<210> 2  
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<212> PRT  
<213> *Candida albicans*

<400> 2  
 Met Ser Met Tyr Thr Ser Arg Leu Ala Thr Glu Tyr Val Pro Leu Ser  
   1              5                 10                 15  
 Glu Ile Lys Arg Pro Ile Pro Pro Val Leu Asp Tyr Gln Lys Ile Asp  
   20            25                 30  
 Ala Met Leu Ser Thr Leu Lys Gly Val Pro Met Glu Ser Ala Thr Cys  
   35            40                 45  
 Lys Val Glu Asp Ile Thr Ala Gly Glu Leu Pro Pro Ile Asp Val Phe  
   50            55                 60  
 Lys Ile Arg Glu Asn Gly Lys Asn Phe Tyr Phe Ala Phe Gly Gly Cys  
   65            70                 75                 80  
 His Arg Phe Gln Ala Tyr Asp Arg Ile Ser Lys Glu Thr Glu Lys Glu  
   85            90                 95  
 Val Met Val Lys Ser Arg Ile Leu Pro Ala Thr Arg Lys Ser Leu Arg  
   100           105                110  
 Ile Tyr Leu Gly Ala Ser Val Asp  
   115           120

<210> 3  
<211> 124  
<212> PRT  
<213> Schizosaccharomyces pombe

<400> 3  
 Met Thr Ser Ile His Thr Gly Ser Asn Asn Asn Ile Val Glu Leu Asp  
   1              5                 10                 15  
 Met Ser Glu Leu Ile Arg Pro Ile Pro Pro Val Leu Asp Met Asn Lys  
   20            25                 30  
 Val Asn Ser Met Met Glu Thr Met Thr Gly Lys Thr Pro Pro Ala Ser  
   35            40                 45  
 Cys Gly Leu Thr Ser Glu Asp Leu Glu Ala Gly Glu Leu Pro Pro Val  
   50            55                 60  
 Asp Val Leu Thr Phe Lys Lys Ser Gly Lys Pro Tyr Tyr Phe Ala Phe  
   65            70                 75                 80  
 Gly Gly Cys His Arg Leu Arg Ala His Asp Glu Ala Gly Arg Lys Lys  
   85            90                 95  
 Val Arg Cys Lys Leu Val Asn Cys Ser Pro Asn Thr Leu Arg Leu Tyr  
   100           105                110  
 Leu Gly Ala Ser Ala Asn Lys Phe Leu Asp Ser Asp  
   115           120

<210> 4  
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 <212> PRT  
 <213> Homo sapiens

<400> 4  
 Met Gly Leu Arg Ala Gly Gly Thr Leu Gly Arg Ala Gly Ala Gly Arg  
 1 5 10 15

Gly Ala Pro Glu Gly Pro Ser Gly Gly Ala Gln Gly Gly Ser  
 20 25 30

Ile His Ser Gly Arg Ile Ala Ala Val His Asn Val Pro Leu Ser Val  
 35 40 45

Leu Ile Arg Pro Leu Pro Ser Val Leu Asp Pro Ala Lys Val Gln Ser  
 50 55 60

Leu Val Asp Thr Ile Arg Glu Asp Pro Asp Ser Val Pro Pro Ile Asp  
 65 70 75 80

Val Leu Trp Ile Lys Gly Ala Gln Gly Gly Asp Tyr Phe Tyr Ser Phe  
 85 90 95

Gly Gly Cys His Arg Tyr Ala Ala Tyr Gln Gln Leu Gln Arg Glu Thr  
 100 105 110

Ile Pro Ala Lys Leu Val Gln Ser Thr Leu Ser Asp Leu Arg Val Tyr  
 115 120 125

Leu Gly Ala Ser Thr Pro Asp Leu Gln  
 130 135

<210> 5  
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 <212> PRT  
 <213> Mus musculus

<400> 5  
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 1 5 10 15

Gly Ala Pro Val Val His Gly Pro Gly Gly Ala Gln Gly Gly Ser Ile  
 20 25 30

His Ser Gly Cys Ile Ala Thr Val His Asn Val Pro Ile Ala Val Leu  
 35 40 45

Ile Arg Pro Leu Pro Ser Val Leu Asp Pro Ala Lys Val Gln Ser Leu  
 50 55 60

Val Asp Thr Ile Leu Ala Asp Pro Asp Ser Val Pro Pro Ile Asp Val  
 65 70 75 80

Leu Trp Ile Lys Gly Ala Gln Gly Gly Asp Tyr Tyr Ser Phe Gly  
 85 90 95

Gly Cys His Arg Tyr Ala Ala Tyr Gln Gln Leu Gln Arg Glu Thr Ile  
 100 105 110  
 Pro Ala Lys Leu Val Arg Ser Thr Leu Ser Asp Leu Arg Met Tyr Leu  
 115 120 125  
 Gly Ala Ser Thr Pro Asp Leu Gln  
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 <210> 6  
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 <213> Drosophila melanogaster  
  
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 Ala Leu Gly Pro Ile Leu Gln Arg Asn Arg Ser Glu Ile Ile Gln Lys  
 20 25 30  
 Gln Ser Leu Thr Asn Arg Gln Ala Phe Arg Arg Tyr Arg Ser Ser Cys  
 35 40 45  
 Ser Thr Met Asp Thr Thr Val His Ser Ala Gly Ile Asp Glu Thr His  
 50 55 60  
 Leu Val Pro Met Ser Val Ile Gln Arg Pro Ile Pro Ser Val Leu Asp  
 65 70 75 80  
 Glu Gln Lys Val Gln Ser Leu Met Glu Thr Ile Lys Asn Glu Thr Ser  
 85 90 95  
 Glu Asp Glu Val Pro Pro Ile Asp Leu Leu Trp Ile Ser Gly Ser Glu  
 100 105 110  
 Gly Gly Asp Tyr Tyr Phe Ser Phe Gly Gly Cys His Arg Phe Glu Ala  
 115 120 125  
 Tyr Lys Arg Leu Gln Arg Pro Thr Ile Lys Ala Lys Leu Val Lys Ser  
 130 135 140  
 Thr Leu Gly Asp Leu Tyr His Tyr Met Gly Ser Ser Ala Pro Lys Tyr  
 145 150 155 160  
 Leu Ala

<210> 7  
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 <212> PRT  
 <213> Arabidopsis thaliana  
  
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 1 5 10 15

Val Ser Ala Ser Ser Asn Gly Ser Pro Pro Val Ile Gly Gly Ser			
20	25	30	
Ser Gly Gly Val Gly Pro Met Ile Val Glu Leu Pro Leu Glu Lys Ile			
35	40	45	
Arg Arg Pro Leu Met Arg Thr Arg Ser Asn Asp Gln Asn Lys Val Lys			
50	55	60	
Glu Leu Met Asp Ser Ile Arg Gln Ile Gly Leu Gln Val Pro Ile Asp			
65	70	75	80
Val Ile Glu Val Asp Gly Thr Tyr Tyr Gly Phe Ser Gly Cys His Arg			
85	90	95	
Tyr Glu Ala His Gln Lys Leu Gly Leu Pro Thr Ile Arg Cys Lys Ile			
100	105	110	
Arg Lys Gly Thr Lys Glu Thr Leu Arg His His Leu Arg			
115	120	125	

&lt;210&gt; 8

&lt;211&gt; 86

&lt;212&gt; PRT

&lt;213&gt; Thermosynechococcus elongatus

&lt;400&gt; 8

Met Arg Val Leu Asp Leu Pro Leu Asn Ala Ile Arg Arg Pro Leu Val			
1	5	10	15

Arg Gln Thr Asp Pro Ala Lys Val Ala Ala Leu Met Ala Ser Ile Ala			
20	25	30	

Glu Ile Gly Gln Gln Glu Pro Ile Asp Val Leu Glu Val Glu Gly His			
35	40	45	

Tyr Tyr Gly Phe Ser Gly Cys His Arg Tyr Glu Ala Cys Gln Arg Leu			
50	55	60	

Gly Leu Pro Thr Ile Arg Ala Arg Val Arg Arg Ala Pro Arg Ser Val			
65	70	75	80

Leu Asn Leu His Leu Ala			
85			

&lt;210&gt; 9

&lt;211&gt; 87

&lt;212&gt; PRT

&lt;213&gt; Nostoc sp.

&lt;400&gt; 9

Met Val Arg Val Gln Glu Ile Pro Leu Asn Gln Ile Arg Arg Pro Leu			
1	5	10	15

Pro Arg Gly Asn Asp Pro Tyr Lys Val Gln Ala Leu Met Glu Ser Ile  
     20                       25                       30  
 Ala Ala Ile Gly Gln Gln Glu Pro Ile Asp Val Leu Glu Val Asp Gly  
     35                       40                       45  
 Gln Tyr Tyr Gly Phe Ser Gly Cys His Arg Tyr Glu Ala Cys Gln Arg  
     50                       55                       60  
 Leu Gly Lys Glu Thr Ile Leu Ala Arg Val Arg Lys Ala Pro Arg Ser  
     65                       70                       75                       80  
 Val Leu Lys Met His Leu Ala  
     85

<210> 10  
 <211> 141  
 <212> PRT  
 <213> Oryza sativa

<400> 10  
 Met Ala Ala Ser Gly Phe Leu Leu Arg Cys Pro Ala Ala Pro Ser Ala  
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 Val Pro Leu Trp Gly Arg Ser Gly Arg Gly Gly Gly Gly Leu Ala  
     20                       25                       30  
 Phe Ser Ala Ser Ser Ser Asn Gly Ala Ala Val Pro Ser Ser Leu Ser  
     35                       40                       45  
 Asp Ser Glu Lys Lys Gly Pro Val Val Met Glu Ile Pro Leu Asp Lys  
     50                       55                       60  
 Ile Arg Arg Pro Leu Met Arg Thr Arg Ala Asn Asp Pro Ala Lys Val  
     65                       70                       75                       80  
 Gln Glu Leu Met Asp Ser Ile Arg Val Ile Gly Leu Gln Val Pro Ile  
     85                       90                       95  
 Asp Val Leu Glu Val Asp Gly Val Tyr Tyr Gly Phe Ser Gly Cys His  
     100                       105                       110  
 Arg Tyr Glu Ala His Gln Arg Leu Gly Leu Pro Thr Ile Arg Cys Lys  
     115                       120                       125  
 Val Arg Arg Gly Thr Lys Glu Thr Leu Arg Ile Gly Cys  
     130                       135                       140

<210> 11  
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 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic  
           primer

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<400> 11
gtcccgccgc ggcggcgacg 20

<210> 12
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      primer

<400> 12
agcagggtgcc aaggaggctg 20

<210> 13
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      primer

<400> 13
ttaattgaat tcatggggct gcgtgcagga gg 32

<210> 14
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      primer

<400> 14
ttttcccttt gcggccgcct actactgcaa gtctggtgatg 44

<210> 15
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
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<222> (2)
<223> Gly or Ser

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<400> 15  
Phe Xaa Gly Cys His Arg  
1 5

<210> 16  
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<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
peptide

<400> 16  
Phe Ser Gly Cys His Arg  
1 5

<210> 17  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
6xHis tag

<400> 17  
His His His His His  
1 5